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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,487	10/03/2001	Nikolai K.N. Leung	010556	1159

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EXAMINER
NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
12/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	09/970,487	LEUNG ET AL.
	Examiner	Art Unit	
	Christine Ng	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 October 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6,9,10,12,14,18,19 and 21-32_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _9_ is/are allowed.

6)☒ Claim(s) _1-6,10,12,14,18,19,21-28,30 and and 31_ is/are rejected.

7)☒ Claim(s) _29 and 32_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _03 October 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 6, 18 and 19 are objected to because of the following informalities:

   a) In claim 6 line 15: "frame" should be changed to --framed--.

   b) In claim 18 line 7: "addresses" should be changed to --addressed--.

   c) In claim 18 line 8: "compresses" should be changed to --compressed--.

   d) In claim 18 line 10: "compresses" should be changed to --compressed--.

   e) In claim 19 line 7: "addresses" should be changed to --addressed--.

   f) In claim 19 line 8: "compresses" should be changed to --compressed--.

   g) In claim 19 line 10: "compresses" should be changed to --compressed--.

   Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-5, 14, 18, 19, 22-28, 30 and 31 are rejected under 35 U.S.C. 112,

second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which applicant regards as the invention.

Claim 1:

Lines 10-11: "the at least one router" lacks antecedent basis.

It is unclear if "the at least one router" (lines 10-11) is one of the "nodes from the

first termination node to the broadcast source node" (lines 13-14), since both the router

and nodes are part of the multicast tree.

<u>Claim 2:</u>

It is unclear if the "neighboring multicast routers between the first termination node and the broadcast source node" (lines 3-4) is one of the "nodes from the first termination node to the broadcast source node" (claim 1, lines 13-14), since both the multicast routers and nodes are part of the multicast tree.

<u>Claim 5:</u>

In line 5: A --,-- should be inserted between "packet" and "the first".

In lines 9-10: The wording "...further comprising changing of addressing the compressed packet..." is confusing.

<u>Claim 14:</u>

It is unclear if "the multicast Internet Protocol address from the Internet Protocol packet" (lines 17-18) is the same as "a multicast address" (line 6).

<u>Claims 18 and 19:</u>

It is still unclear what is meant by "...preparing a second Internet Protocol packet encapsulating the broadcast message and addressed to the multicast address..." (lines 14-15). This is unclear because before this step, the claims also include the step of "...encapsulating the compressed framed packet according to the multicast address" (lines 12-13). In Figures 9A, 11A and paragraphs 1075, 1080 of the specification, the compressed framed packet is encapsulated according to a MC IP, resulting in a MC CFP, i.e. a multicast compressed framed packet. Therefore, the compressed framed packet is encapsulated with a multicast IP address in one step, and not two steps as claimed.

<u>Claim 25:</u>

Lines 7-8: "the at least one router" lacks antecedent basis.

It is unclear if "the at least one router" (lines 7-8) is one of the "nodes from the

first termination node to the broadcast source node" (lines 9-10), since both the router

and nodes are part of the multicast tree.

<u>Claim 30:</u>

According to lines 6-7, an anchor BSC is "...operable to receive either the at

least one unicast packet *or* the multicast compressed frame packet". It is unclear

whether or not the steps in lines 7-17 are performed if the anchor BSC receives "the at

least one unicast packet", since the steps in lines 7-17 refer to "the multicast

compressed frame packet".

It is unclear whether or not "an anchor BSC" (line 6) is the same as "a base

station" (claim 10, line 15), since they both receive the unicast packet.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 6, 14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent

No. 6,895,216 to Sato et al.

Referring to claims 6 and 14, Eyuboglu et al disclose in Figure 8 a method for

processing Internet Protocol packets in a wireless transmission system supporting

broadcast transmissions, the method comprises:

Receiving an Internet Protocol packet at a packet service data node (PDSN 100),

the Internet Protocol packet encapsulating a broadcast message, the Internet Protocol

packet having a destination address comprising a multicast Internet Protocol address.

The PDSN receives an IP packet from IP core network that belongs to a multicast

group, and therefore has a multicast IP destination address. Refer to Column 2, lines

41-58 and Column 9, lines 22-33.

Applying a framing protocol (Simple Link Layer Protocol) to produce a framed

packet (Figure 10, link layer frame carrying IP multicast packet 140). "When the PDSN

receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple

Link Layer frame, and sends it over these multicast A10 tunnels to RNC's that serve

members of that multicast group". Refer to Column 5, lines 38-43; and Column 9, lines

6-10 and 22-40.

Encapsulating the framed packet with a routing protocol (Generic Routing

Encapsulation GRE). Refer to Column 2, lines 20-21; and Column 9, lines 34-40.

Further encapsulating the encapsulated framed packet according to a multicast

Internet Protocol to form a multicast framed packet, further comprising addressing the

multicast frame packet with a destination address (Figure 10, A10 Tunnel ID 150) for

transmission corresponding to the multicast Internet address from the Internet Protocol

packet. Before transmitting the packet to the RNC, the PDSN places an A10 Tunnel ID

in the key field of the GRE header in the packet, which states the multicast group that the packet belongs to. Refer to Column 3, line 48 to Column 4, line 26; and Column 9, lines 34-40.

Eyuboglu et al do not disclose compressing the Internet Protocol packet.

Sato et al disclose compressing multicast information to several wireless terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include compressing the Internet Protocol packet; the motivation being that in case transmission rate is low, compressing the multicast information allows more information to be transmitted per unit time; thereby saving bandwidth and processing time.

Referring to claim 18, Eyuboglu et al disclose in Figure 8 an infrastructure element (PDSN 100) for processing broadcast transmissions in a wireless communication system, the infrastructure element comprising:

Means for receiving a broadcast message, the broadcast message encapsulated in an Internet Protocol packet, the Internet Protocol packet addressed to a multicast address. The PDSN receives an IP packet from IP core network that belongs to a multicast group, and therefore has a multicast IP destination address. Refer to Column 2, lines 41-58 and Column 9, lines 22-33.

Means for applying a framing protocol (Simple Link Layer Protocol) resulting in a packet (Figure 10, link layer frame carrying IP multicast packet 140). "When the PDSN receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple

Link Layer frame, and sends it over these multicast A10 tunnels to RNC's that serve members of that multicast group". Refer to Column 5, lines 38-43; and Column 9, lines 6-10 and 22-40.

Means for further encapsulating the framed packet with a routing protocol (Generic Routing Encapsulation GRE). Refer to Column 2, lines 20-21; and Column 9, lines 34-40.

Means for encapsulating the framed packet according to a multicast address (Figure 10, A10 Tunnel ID 150).

Means for preparing a second Internet Protocol packet encapsulating the broadcast message and addressed to the multicast address, wherein the infrastructure element is a packet data service node (PDSN 100). Before transmitting the packet to the RNC, the PDSN places an A10 Tunnel ID in the key field of the GRE header in the packet, which states the multicast group that the packet belongs to. Refer to Column 3, line 48 to Column 4, line 26; and Column 9, lines 34-40.

Eyuboglu et al do not disclose compressing the Internet Protocol packet.

Sato et al disclose compressing multicast information to several wireless terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include compressing the Internet Protocol packet; the motivation being that in case transmission rate is low, compressing the multicast information allows more information to be transmitted per unit time; thereby saving bandwidth and processing time.

Referring to claim 19, refer to the rejection of claim 18. Furthermore, Eyuboglu et al disclose wherein the multicast address corresponds to intended recipients (164) of the broadcast message. Refer to Column 10, lines 41-51; and Column 11, line 57 to Column 12, line 11.

6.	Claims 10, 12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent No. 6,895,216 to Sato et al, and in further view of U.S. Patent No. 6,801,508 to Lim.

Referring to claim 10, Eyuboglu et al disclose in Figure 8 a wireless communication system for processing broadcast transmissions in a wireless communication system, the system comprising:

A packet service data node (PDSN 100) adapted to receive a broadcast message, comprising a multicast Internet Protocol address, wherein the packet data service node is operable to generate and transmit a multicast framed packet (Figure 10, link layer frame carrying IP multicast packet 140) based on the broadcast message, wherein the multicast framed packet is addressed to the multicast Internet Protocol address (Figure 10, A10 Tunnel ID 150). The PDSN receives an IP packet from IP core network that belongs to a multicast group, and therefore has a multicast IP destination address. The PDSN then forms the link layer frame carrying IP multicast packet 140 with ATI 150. Refer to Column 2, lines 41-58 and Column 9, lines 6-10 and lines 22-40.

A *radio network controller* (RNC 124,128) adapted to receive the multicast framed packet, wherein the *radio network controller* is operable to generate and transmit at least one unicast packet based on the multicast framed packet, wherein the

at least one unicast packet is addressed to at least one unicast addressed

corresponding to a base station (connected to RN 160,162). "When the RNC serves

users from several Radio Node's 160,162, it tunnels unicast copies of the air link frames

carrying the IP packets to all these RN's." (Column 10, lines 41-43). Refer to Column

10, lines 11-31; and Column 10, lines 41-51.

Eyuboglu et al do not disclose that the Internet Protocol packet has been

compressed.

Sato et al disclose compressing multicast information to several wireless

terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include that the Internet Protocol packet has been compressed;

the motivation being that in case transmission rate is low, compressing the multicast

information allows more information to be transmitted per unit time; thereby saving

bandwidth and processing time.

Eyuboglu et al also do not disclose that the *radio network controller* is a *packet

control function node*.

Lim discloses in Figure 4 that a RNC (radio network controller) performs the

same functions as a packet control function PCF node (RNC/PCF 121,122,123).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include that the *radio network controller* is a *packet control

function node*; the motivation being that a RNC performs the same functions in a circuit

switched environment as a PCF in a packet data environment.

Referring to claim 12, Eyuboglu et al disclose that the packet control function node (RNC 124,128) processes the broadcast message and forwards the broadcast message to an intended recipient. The RNC 124,128 forwards an incoming multicast packet to those sectors that have a member in that multicast group. Refer to Column 10, lines 52-55 and Column 11, lines 49-52.

Referring to claim 21, Eyuboglu et al disclose in Figure 8 a communication path for processing broadcast messages in a wireless communication system, comprising:

A first multicast tree portion formed between a content source (IP core network) and a packet data service node (PDSN 100), wherein the first multicast tree portion is operable to transmit a broadcast message addressed to a multicast Internet Protocol address. The PDSN receives an IP packet from IP core network that belongs to a multicast group, and therefore has a multicast IP destination address. Refer to Column 2, lines 41-58 and Column 9, lines 22-33.

A second multicast tree portion formed between the packet data service node (PDSN 100) and a *radio network controller* (RNC 124,128), wherein the second multicast tree portion is operable to generate and transmit a multicast framed packet (Figure 10, link layer frame carrying IP multicast packet 140) based on the broadcast message, wherein the multicast framed packet is addressed to a multicast Internet Protocol address (Figure 10, A10 Tunnel ID 150). Refer to Column 9, lines 6-10 and lines 22-40.

A third portion formed from the *radio network controller* (RNC 124,128) to the base station (connected to RN 160,162), wherein the third multicast portion is operable

to generate and transmit at least one unicast packet based on the multicast framed

packet, wherein the at least one unicast packet is addressed to at least one unicast

address corresponding to a base station. "When the RNC serves users from several

Radio Node's 160,162, it tunnels unicast copies of the air link frames carrying the IP

packets to all these RN's." (Column 10, lines 41-43). Refer to Column 10, lines 11-31;

and Column 10, lines 41-51.

Eyuboglu et al do not disclose that the Internet Protocol packet has been

compressed.

Sato et al disclose compressing multicast information to several wireless

terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include that the Internet Protocol packet has been compressed;

the motivation being that in case transmission rate is low, compressing the multicast

information allows more information to be transmitted per unit time; thereby saving

bandwidth and processing time.

Eyuboglu et al do not disclose that the *radio network controller* is a *packet control*

function node.

Lim discloses in Figure 4 that a RNC (radio network controller) performs the

same functions as a packet control function PCF node (RNC/PCF 121,122,123).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include that the *radio network controller* is a *packet control*

function node; the motivation being that a RNC performs the same functions in a circuit switched environment as a PCF in a packet data environment.

Allowable Subject Matter

7.   Claim 9 is allowed.

8.   Claims 29 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christine Ng whose telephone number is (571) 272-

3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng
December 12, 2007

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